



CCAMLR

Commission for the Conservation of Antarctic Marine Living Resources  
Commission pour la conservation de la faune et la flore marines de l'Antarctique  
Комиссия по сохранению морских живых ресурсов Антарктики  
Comisión para la Conservación de los Recursos Vivos Marinos Antárticos

SCIENTIFIC COMMITTEE

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# The Scientific Committee on Antarctic Research (SCAR) Annual Report 2019/20



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## **1. Summary**

SCAR is an interdisciplinary body of the International Science Council (ISC), with a membership of 44 countries and nine ISC unions and comprising an extensive international network of scientists. SCAR is charged with initiating, developing and coordinating high quality international scientific research in, from and about the Antarctica and the Southern Ocean.

SCAR's Mission is to advance Antarctic research, including observations from Antarctica, and to promote scientific knowledge, understanding and education on any aspect of the Antarctic region and its role in the Earth System. SCAR also provides independent and objective scientific advice and information to the Antarctic Treaty System and other bodies and facilitates the international exchange of Antarctic information within the scientific community.

Here, SCAR reports on recent and future activities of relevance to CCAMLR.

## **2. Introduction**

As an official Observer to the Antarctic Treaty, SCAR provides independent, objective scientific advice to the Antarctic Treaty Consultative Meetings (ATCM) and to those bodies which form part of the broader Antarctic Treaty System such as the Committee on Environmental Protection (CEP) and CCAMLR.

SCAR also provides advice to other bodies such as the United Nations Framework Convention on Climate Change (UNFCCC) and the Intergovernmental Panel on Climate Change (IPCC). In addition to responding to requests for advice, SCAR also identifies issues resulting from greater scientific understanding of the Antarctic region and the Southern Ocean and brings them to the attention of policymakers.

SCAR's coordination of scientific research adds value to national efforts by enabling national researchers to collaborate on large-scale scientific programmes to accomplish objectives not easily achievable by any single country. SCAR's success depends largely on the quality and timeliness of its scientific outputs and advice. Descriptions of SCAR's research programmes and scientific outputs are available at: [www.scar.org](http://www.scar.org).

SCAR produces an electronic Newsletter (<https://www.scar.org/scar-newsletter/>) highlighting relevant science and is also available on [Facebook](#), [LinkedIn](#), and [Twitter \(@SCAR\\_tweets\)](#).

## **3. Engagement between CCAMLR and SCAR**

SCAR and CCAMLR have a history of cooperation, and representatives of each group continue to meet regularly to maintain and develop this productive working relationship by identifying

current areas of mutual interest. The Chief Officer of SCAR SC-ATS (the SCAR Group with a key responsibility for external policy-related advice) and the Chair of SC-CAMLR, continue to maintain regular communications regarding priority areas of research and key issues which would benefit from scientific advice from SCAR. SC-ATS Chief Officer Dr Aleks Terauds (Australia) ended his term in September 2020. Dr Susie Grant (UK) has now assumed this role and will undertake it for an initial term of four years.

Despite the challenges and uncertainties associated with the COVID-19 pandemic, SCAR has remained active over the 2019-20 period. Several recent developments reflect SCAR's commitment to continue its engagement with CCAMLR, particularly with regard to the development of research that is relevant to priorities and contemporary discussion within CCAMLR. Here we highlight some of these developments.

### 3.1 The Retrospective Analysis of Antarctic Tracking Data (RAATD)

In 2009, the marine predator research community was invited to provide tracking data to SCAR's Expert Group on Birds and Marine Mammals. Over the next decade, the Retrospective Analysis of Antarctic Tracking Data (RAATD) team collated and painstakingly quality-controlled and filtered over 4,000 tracks (3 million locations) from 17 marine predator species, studied between 1991 and 2016.

This dataset, published in a recent data paper (Ropert-Coudert et al. 2020), includes contributions from more than 70 scientists from 12 National Antarctic Programs and represents the field efforts of hundreds of individuals. An important feature of the dataset is that it is freely available to everyone. The data underpinned a second paper, published in the journal *Nature* this year (Hindell et al. 2020), wherein the RAATD team identified 'Areas of Ecological Significance' in the Southern Ocean, and highlighted the relevance of these areas for management and conservation of the region. See SC-CAMLR-39/BG/23 for more information.

### 3.2 SCAR Krill Action Group (SKAG)

SKAG held regular online meetings to discuss and work on a manuscript which was recently accepted by *Communications Earth & Environment - Nature* (Meyer et al. in press).

In addition, members of SKAG (Angus Atkinson and Simeon Hill) worked in cooperation with the chair (Bettina Meyer) and vice chair (So Kawaguchi) on a workshop for spring 2021, funded by WWF-UK "To evaluate change in the krill-based food web and to develop solutions to the future monitoring of krill". This is a first step towards realising the "Priorities for krill research to support ecosystem-based management of the krill fishery", outlined in Box 2 in the paper. See SC-CAMLR-39/BG/24 for more information.

### 3.5 SCAR Sponsored Programs

SCAR co-sponsors several programs that are of relevance to the work of CCAMLR, including the Southern Ocean Observing System (SOOS) (<https://www.soos.aq/>) and the Integrating Climate and Ecosystem Dynamics in the Southern Ocean (ICED) programme (<https://www.iced.ac.uk/>). Much new work has been done by both groups over the past year, and further details can be found on their respective web pages.

#### **4. SCAR Open Science Conference**

Following the cancellation of SCAR’s biennial Open Science Conference scheduled to take place in August 2020 in Hobart, Tasmania, SCAR successfully delivered a virtual alternative, ‘SCAR 2020 Online’ from 3-7 August 2020. This was a free online conference open to all, presenting many of the highlights of the originally planned meeting. Over 2700 participants from 60 countries registered for the event, which included 24 live events, 584 virtual posters and 21 side events covering a wide spectrum of subjects across the natural and social sciences. The opening plenary was delivered by co-chair of IPCC working group I, Dr Valérie Masson-Delmotte, who highlighted the vital importance of continued scientific observation in and around Antarctica to reduce key uncertainties around the impact of Antarctica on future climate change. Recordings of the events, posters and presentations can still be accessed via the virtual conference platform (see SCAR2020.org) or the [SCAR2020 Online YouTube channel](#).

#### **5. UN Decade of Ocean Science**

SCAR was one of several partners that supported the first Southern Ocean Regional Workshop, held on 16 February 2020, in San Diego, CA, USA. The workshop aimed to provide Southern Ocean community inputs to the Science Action Plan of the UN Decade of Ocean Science. See SC-CAMLR-39/BG/XX for more information.

#### **6. Planning for new SCAR Scientific Research Programmes**

SCAR facilitates science through a range of subsidiary activities, among which are the key SCAR Scientific Research Programmes (SRPs) (<https://www.scar.org/science/srp/>). In 2020, SCAR’s current SRP suite will come to an end, having facilitated exceptional scientific understanding of Antarctica and the Southern Ocean, our world, and also fundamental questions about the nature of the Universe. These outcomes were highlighted at the SCAR Online Science Conference in 2020.

Proposals for three new SCAR Scientific Research Programmes are close to completion and have been reviewed *en route* to final decisions about them. These proposed new SRPs are:

##### **6.1 Integrated Science to Inform Antarctic and Southern Ocean Conservation (Ant-ICON)**

Ant-ICON aims to answer fundamental science questions relating to the conservation and management of Antarctica and the Southern Ocean. The programme will support the SCAR Standing Committee on the Antarctic Treaty System with outputs that are of direct relevance to Antarctic and Southern Ocean policy makers, including in the CEP and SC-CAMLR. For more information and key contacts, see <https://scar.org/science/ant-icon/home/>.

##### **6.2 Instabilities and Thresholds in Antarctica (INSTANT)**

The INStabilities & Thresholds in ANTArctica (INSTANT) Scientific Research Programme (SRP) will address a first-order question about Antarctica’s contribution to sea level. It encompasses geoscience, physical sciences and biological sciences, of the way in which interactions between the ocean, atmosphere and cryosphere have influenced ice-sheets in the past, and what expectations will be in the future with a special focus on quantifying the contributions to global sea level change. For more information and key contacts see <https://www.scar.org/science/instant/home/>

### 6.3 Near-term Variability and Prediction of the Antarctic Climate System (Ant-Clim<sup>now</sup>)

AntClim<sup>now</sup> aims to answer fundamental science questions relating to Antarctic climate variability. Many of the most important questions in Antarctic and Southern Ocean climate science are related to understanding present-day climatic trends and estimating future change in the near term (present day to mid-21st century). This topic is a key gap in the scope of the current SCAR Scientific Research Programmes. For more information and key contacts see <https://scar.org/science/antclimnow/home/>.

## 7. References

[Hindell, M. A., Reisinger, R. R., Ropert-Coudert, Y., et al.](#) (2020) Tracking of marine predators to protect Southern Ocean ecosystems. *Nature* 580, 87-92, doi:10.1038/s41586-020-2126-y.

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